## DETAILED ACTION

1. The foreign priority documents JP 2004-045010, filed on February 20, 2004, JP 2004-056678, filed on March 01, 2004, JP 2004-080378, filed on March 19, 2004 and JP 2004-294082, filed on October 06, 2004 were received and acknowledged. However, in order to benefit of the earlier filing dates, certified English translations are required.

### *Election/Restrictions*

2. In response to the restriction requirement set forth in the previous Office Action, the applicant elected without traverse Group II - claims 8-10. Claims 1-7 and 11-18 are withdrawn as being directed to a non-elected invention.

### *Claim Rejections - 35 USC § 102*

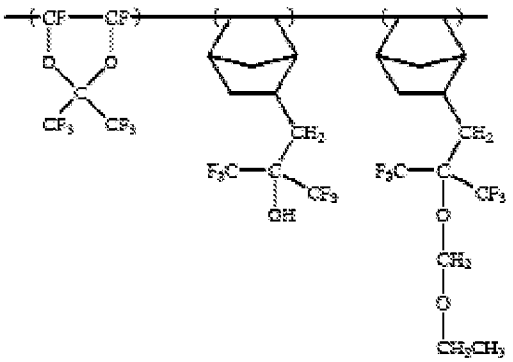
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Kim (US Pg-Pub 2002/0177067), as evidenced by Niwa et al. (US Pg-Pub 2003/0003392).

With regard to claim 8, Kim discloses that a photoresist material is formed on an underlying layer (par.0006), wherein the photoresist material comprises a photosensitive polymer and an acid generator (PAG) (abstract).

Kim discloses the copolymer of formula (I):



(I) (par.0129) and further discloses that the terpolymer (I) and a combination of triphenylsulfonium triflate and triphenylsulfonium nonaflate as photoacid generator (PAG) give a photoresist composition (par.0144).

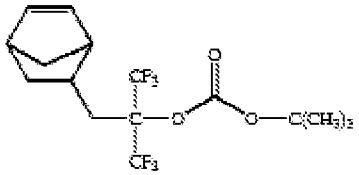
The photoresist composition is coated on a silicon wafer (par.0132, 0134 and 0144) so the structure formed by the photosensitive layer and the silicon wafer is equivalent to laminated resist having the photoresist layer (L3) coated on a substrate as an outermost layer of the laminated resist of the instant application.

The third repeating unit of the terpolymer (I) comprises an ethoxymethyl group, which is known in the art as an acid labile group, as evidenced by Niwa et al. in par.0020.Therefore, the terpolymer (I) is equivalent to the fluorine-containing polymer (A2) having a protective group $Y^2$ which can be converted to an alkali-soluble group by dissociation with an acid of the instant application.

The fact that the laminated resist of the instant application is for use in immersion lithography is merely an intended use and adds no patentable weight to the claim. Therefore, the structure formed by the photosensitive layer and the silicon wafer of Kim fully anticipates the laminated resist of the instant application.

5. Claim 8 is rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al. (US Pg-Pub 2002/0146638).

Ito et al. disclose a polymer comprising units of NB-BOCHF and MTFMA (methyl α-(trifluoromethyl)acrylate), NB-BOCHF being represented by the formula (II):



(par.0044), wherein the tert-butoxycarbonyl groups protect the -OH functionality (par. 0092).

Ito et al. disclose that a resist composition comprises the norbornene-fluoroacrylate copolymer and an acid generator (par.0057).

Ito et al. disclose that a substrate may be coated with a film comprising the resin composition (par.0069), wherein the substrate may be coated with an organic anti-reflective layer prior to the deposition of the resist or, alternatively, a bilayer resist may be employed, with a resist composition comprising the polymer with NB-BOCHF and MTFMA units as an upper resist layer (imaging layer) and an underlayer comprised of a material that is highly absorbing at the imaging wavelength and compatible with the imaging layer, such as a DNQ/novolac resist material (par.0069).

The structure of Ito et al. which comprises a substrate and a bilayer resist, wherein the resist comprising the NB-BOCHF-MTFMA copolymer is the upper resist and a DNQ/novolac resist is the underlayer (par.0069) is equivalent to the laminated

resist of the instant application, wherein the photoresist layer (L3) is formed on a substrate as an outermost surface of the laminated resist.

The NB-BOCHF – MTFMA copolymer is equivalent to the fluorine containing polymer (A2) comprising a protective group $Y^2$, which in this case is a tertbutoxycarbonyl group.

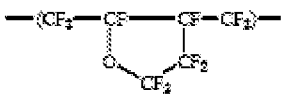
The fact that the laminated resist of the instant application is for use in immersion lithography is merely an intended use and adds no patentable weight to the claim. Therefore, the structure comprising a substrate, an underlayer and an upper resist layer of Ito et al., as shown above, fully anticipates the laminated resist of the instant application.

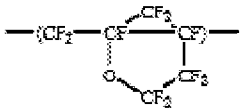
6. Claim 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Araki et al. (US Pg-Pub 2003/0152864).

Araki et al. disclose a fluorine-containing polymer of formula (III):

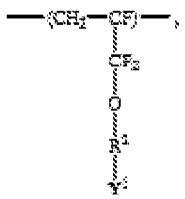
-(M6)-(M7)-(A3)-

(III) (par.0352), wherein M6 is preferably represented by one of the formulas:





(par.0366) and M7 may be represented by the formulas:



,wherein $R^2$ is a fluorine containing alkylene group having 1 to 20 carbon atoms, a fluorine-containing alkylene group having 2 to 100 carbon atoms and ether bond or a fluorine-containing arylene group having 3 to 20 carbon atoms and $Y^1$ is an acid-labile or acid-degradable functional group (par. 0370, par.0196, par.0217, par.0278-0280 wherein $R^2$ and $Y^1$ are defined in par.0176).

The structural unit A3 is an optional component and is a monomer polymerizable with M6 and M7 (par.0379).

Araki et al. further disclose that the acid-labile or acid-degradable functional group $Y^1$ is a functional group which enables the polymer to be soluble in alkali developing solution due to action of an acid though the polymer is insoluble or hardly soluble in alkali before the reaction with an acid (par.0406).

Araki et al. further discloses that a chemical amplifying type photoresist composition comprises a resin (polymer) component and a photoacid generator (par.0512).

A solution of the chemical amplifying resist is applied on a substrate to form a coating film (par.0896).

The structure comprising a substrate and the coating film formed by the chemical amplifying resist comprising the fluorinated polymer (III) and an acid generator , wherein

the unit M7 of the copolymer (III) comprises acid-labile or acid-degradable groups is equivalent to the laminated resist of the instant application.

The fact that the laminated resist of the instant application is for use in immersion lithography is merely an intended use and adds no patentable weight to the claim. Therefore, the structure formed by the substrate and the coating film of Araki et al., as shown above, fully anticipates the laminated resist of the instant application.

With regard to 9-10, Araki et al. disclose that the fluorine-containing cyclic polymer of formula (III) have excellent water repellency (par.0388), which is equivalent to a water contact angle of more than $90^{o}$.

It is the examiner's position that the coating film formed by the chemical amplifying resist comprising the fluorine-containing cyclic polymer of formula (III) has water repellency and implicitly a water contact angle larger than $90^{o}$.

## ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANCA EOFF whose telephone number is (571)272-9810. The examiner can normally be reached on Monday-Friday, 6:30 AM-4:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on 571-272-1526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. E./
Examiner, Art Unit 1795

/Cynthia H Kelly/
Supervisory Patent Examiner, Art Unit 1795